what is claimed is:

1. An apparatus for electroplating a metal on a semiconductor wafer, the apparatus comprising:

a module containing a plurality of separate stations; wherein the plurality of separate stations is configured to perform a plurality of distinct sub-processes associated with metal electroplating and at least two stations of the plurality of separate stations contain distinct electrolyte compositions; and

a mechanism for transporting the semiconductor wafer to and from each station of the plurality of separate stations, wherein the plurality of distinct sub-processes associated with metal electroplating includes two or more of the following: wetting, initiation, seed layer repair, fill, overburden, reclaim, electroless plating, and activation processes for electroless plating.

2. The apparatus of claim 1, wherein the metal is copper.

3. The apparatus of claim 1, wherein the module includes separate stations for performing at least fill and overburden.

4. The apparatus of claim 1, wherein the mechanism for transporting the semiconductor wafer comprises a robot arm.

5. The apparatus of claim 1, wherein the mechanism for transporting the semiconductor wafer comprises a first robot arm which moves the semiconductor wafer between a wafer carrier and the module and a second robot arm which indexes the semiconductor wafer from station to station within the module.

6. The apparatus of claim 1, wherein at least two stations of the plurality of separate stations contain distinct electric field shaping apparatus.

7. The apparatus of claim 1, wherein at least two stations of the plurality of separate stations are chemically isolated from one another.

8. The apparatus of claim 1, wherein the stations comprise isolated electrolytic cells.

9. The apparatus of claim 1, wherein the stations comprise polymeric or other membrane separators between adjacent stations.

10. A method for electroplating a metal on a semiconductor wafer, the method comprising:

processing the semiconductor wafer in a first station of a plurality of separate stations using a first sub-process chosen from a plurality of distinct sub-processes associated with metal electroplating; and

processing the semiconductor wafer in a second station of the plurality of separate stations using a second sub-process, distinct from the first sub-process, chosen from the plurality of distinct sub-processes associated with metal electroplating,

wherein the plurality of distinct sub-processes associated with metal electroplating include two or more of the following: wetting, initiation, seed layer repair, fill, overburden, reclaim, electroless plating, and activation processes for electroless plating, and

wherein first and second stations process the semiconductor wafer in separate baths comprising distinct electrolyte compositions.

11. The method of claim 10, wherein the metal is copper.

12. The method of claim 10, wherein the first sub-process is a fill sub-processes and the second sub-process is an overburden sub-process.

13. The method of claims 12, wherein an electrolyte employed in the fill sub-process contains between about 5 and 30 g/L copper ion, between about 8 and 180

g/L acid, between about 300 and 3000 ppm of a suppressor, and between about 2 and 50 ppm of an accelerator.

14. The method of claim 12, wherein the electrolyte employed in the overburden sub-process contains between about 20 and 40 g/L copper ion, between about 50 and 200 g/L acid, between about 5 and 500 ppm of suppressor, and between about 10 and 150 of ppm accelerator.

15. The method of claim 12, wherein the overburden sub-process employs a current density of between about 25 and 80 mA/cm^2.

16. The method of claim 12, wherein the overburden sub-process takes between about 10 and 200 seconds.

17. The method of claim 12, wherein the overburden sub-process takes between about 20 and 100 seconds.

18. The method of claim 12, wherein the overburden sub-process takes between about 30 and 60 seconds.

19. The method of claim 10, further comprising transferring the semiconductor wafer from the first station to the second station.

20. The method of claim 10, wherein at least two sub-processes of the plurality of distinct processes associated with metal electroplating employ distinct current shaping apparatus.

21. The method of claim 10, wherein at least two sub-processes of the plurality of distinct processes associated with metal electroplating are chemically isolated from one another.

22. The method of claim 10, wherein wetting the semiconductor wafer is performed at an angle between about 0 and 20 degrees deviation from the plane of the wetting solution surface.

23. The method of claim 10, wherein wetting the semiconductor wafer is performed at an angle of between about 1 and 15 degrees deviation from the plane of the wetting solution surface.

24. The method of claim 10, wherein the first and second stations comprise isolated electrolytic cells.

25. The method of claim 10, wherein the first and second stations are separated by polymeric or other membrane separators.